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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,036	03/25/2004	Neil Andrew Abercrombie Simpson	CRUI/0011	5819

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EXAMINER

LE, HUNG CHARLIE

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,036	SIMPSON ET AL.	
	Examiner	Art Unit	
	Hung C. Le	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/28/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-111 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 10, 12-15, 17, 18, 20, 21, 26, 28-32, 34, 37, 38, 41, 43, 44, 50-55, 82-86, & 90-111 is/are rejected.
- 7) ☒ Claim(s) 9 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>Various</u> | 6) <input checked="" type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 8, 11, 16, 19, 22-24, 27, 33, 35, 36, 39, 40, 42, 45 - 47, 49, 56- 82, 87 -89, 92 -94.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, various species (Claims 1 – 7, 9, 10, 12 – 15, 17, 18, 20, 21, 26, 28 – 32, 34, 37, 38, 41, 43, 44, 48, 50 – 55, 82- 86 and 90–111 were added) in the reply filed on 09/28/06 is acknowledged.
2. Claims 8, 11, 16, 19, 22 – 25, 27, 33, 35, 36, 39, 40, 42, 45 – 47, 49, 56 – 81, 87 – 89 were withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group/species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 09/28/2006.
3. Newly submitted claims 82, 92 - 94 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Non-elected species. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 82, 92 – 94 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

3. Claims 9, 37 are objected to because of the following informalities:
depend on withdrawn claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3, 5, 29 – 32, 95, 99, 103, 107, & 111 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a) The terms "...substantially avoid...", "...substantially constant..." are vague/unclear. It is not known what all is meant and encompasses by these terms. Therefore, it makes the claim indefinite.
- b) Claim 32: The term "...high frequency." Is a relative term. It is not known what all is meant and encompasses by the term high as to what standard is used. Therefore, it makes the claim indefinite.

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6. Claim 17 recites the limitation "the form" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 50 recites the limitation "the tubing wall" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 – 7, 9, 10, 12 – 15, 17, 18, 20, 21, 26, 28 – 32, 34, 38, 41, 43, 44, 48, 50 – 55, 83 – 86, 90, 91, 95 – 111 are rejected under 35 U.S.C. 102(b) as being anticipated by Zheng et al. (US 6,571,870 B2).

With respect to claim 1: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: A method of expanding tubing, the method comprising: locating an expansion device (16A & 16B) in tubing (12) to be expanded (Wellbore 10 is lined with tubing 12; Col. 3, lines 18+) creating a vibration (Col. 3, lines 28+) with fluid flowing through at least one of the expansion device and the tubing (Col. 10, line 42+); vibrating at least one

of the tubing and the expansion device (Col. 12, line 7+); and translating the expansion device relative to the tubing (See Fig. 1).

While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

With respect to claim 2: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: wherein the nature of the vibration of at least one of the tubing and the expansion device is selected to reduce friction between the tubing and the device (Col. 3, lines 43+).

With respect to claim 3: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: wherein the vibration of at least one of the expansion device and the tubing is selected to substantially avoid static friction between contacting surfaces of the expansion device and the tubing (Col. 3, lines 47+).

With respect to claims 4, 98, 102, 106 & 110 Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: wherein a driving force is applied to translate the expansion device through the tubing (Col. 3, lines 53+).

With respect to claims 5, 95, 99, 103, 107 & 111: Zheng et al. (Abstract, Figs. 1, 3, 5,

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6 &7, claims) discloses: wherein the driving force remains substantially constant as the expansion device is translated through the tubing (Col. 3, lines 59+). Zheng's driving force also remains substantially constant as it's inherent in order to maintain system integrity.

With respect to claim 6: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the direction of the vibration is multi-directional (See Fig. 1).

With respect to claim 7: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein at least a major portion of the expansion device (16A & 16B) is subject to vibration (Fig. 1, Col. 3, lines 28+).

With respect to claim 9: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein a surface portion of the device is subject to vibration (Fig. 1, Col.5, lines 26+).

With respect to claim 10: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein portions of the expansion device (16A & 16B) experience different forms of vibration (Col. 5, lines 62+).

With respect to claim 12: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein only a selected portion of the tubing (12) is vibrated (Fig. 1).

With respect to claim 13: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein a portion of the tubing (12) adjacent the expansion device (16A & 16B) is vibrated (Fig. 1).

With respect to claim 14: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein a surface portion of the tubing (12) is vibrated (Fig. 1).

With respect to claim 15: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the vibration induces physical movement of at least one of the expansion device (16A & 16B) and tubing (12) (Fig. 1).

With respect to claim 17: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the vibration takes the form of at least one wave traveling through at least one of the expansion device (16A & 16B) and the tubing (12) (Col. 5, lines 62+, Figs. 1 – 3)).

With respect to claim 18: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the vibration is created locally relative to the tubing (12) being expanded (Fig. 1).

With respect to claim 20: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses:

creating the vibration with a moving mass (16A & 16B, Fig. 1).

With respect to claim 21: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: creating the vibration by providing a varying restriction to fluid flowing through at least one of the expansion device (16A & 16B) and the tubing (12) (Col. 10, lines 31+). Valve mechanism 412 in Zheng et al. provides varying restriction to fluid flowing through expansion device (16A & 16B).

With respect to claim 26: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: coupling a source of vibration (Col. 3, lines 53+) to at least one of the expansion device (16A & 16B) and the tubing (12). Applicant's claim language, "source of vibration reads on the mechanism to actuate vibration device (16A & 16B)

With respect to claim 28: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: comprising indirectly coupling a source of vibration to at least one of the expansion device and the tubing (Col. 3, lines 53+).

With respect to claim 29: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: wherein the amplitude of the vibration is substantially constant (Col. 4, lines 27+).

With respect to claim 30: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims)

discloses: wherein the frequency of the vibration is substantially constant (Col. 4, lines 27+).

With respect to claim 31: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims)

discloses: wherein the form of the vibration is substantially constant Col. 3, lines 59+).

With respect to claim 32: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims)

discloses: wherein the vibration is of high frequency (Col. 4, lines 28+). Applicant has not defined the threshold for what is considered "high frequency of vibration". Absent such definition, Zheng's frequency of vibration is considered by the examiner as "high frequency" and therefore reads on applicant's limitation.

With respect to claim 34: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims)

discloses: wherein the form of the vibration is selected such that the vibration is not apparent as physical movement (Fig. 1).

With respect to claim 38: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims)

discloses: wherein the vibration comprises a plurality of different components (See Fig. 1).

With respect to claim 41: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the vibration is selected to avoid a natural frequency of at least one of the expansion device and the tubing. Zheng et al. inherently selects the vibration to avoid a natural frequency, as per applicant's claim because the vibration frequency is selected to avoid excessive vibrations that may cause damage to the instrument" (See Col. 4, lines 36+).

With respect to claim 43: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: comprising applying a mechanical driving force to translate the expansion device (16A & 16B) relative to the tubing (12) (Col. 10, lines 31+).

With respect to claim 44 Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the driving force comprises at least one of a pulling, pushing and torsional force (Col. 3, lines 37+).

With respect to claim 48: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: wherein the expansion device (16A & 16B) is translated axially relative to the tubing (12) (Fig. 1).

With respect to claim 50: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 &7, claims) discloses: expanding the tubing by creating localized compressive yield in the tubing wall (Col. 4, lines 4+).

With respect to claim 51: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims)

discloses: varying a diameter of the expansion device (16A & 16B, Fig. 1).

With respect to claim 52: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims)

discloses: creating a pressure differential across a wall of the tubing (12, Fig. 1).

With respect to claim 53: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims)

discloses: wherein the pressure differential applied across the tubing wall is varied .

With respect to claim 54: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims)

discloses: wherein the pressure differential is cycled (Zheng's process can also meet this step) .

With respect to claim 55: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims)

discloses: comprising isolating a volume of fluid containing the expansion device (Col. 5, lines 26+, Fig.3).

With respect to claim 83: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims)

discloses: A method of expanding tubing, the method comprising: locating an expansion device (16A & 16B) in tubing (12) to be expanded; vibrating at least one of the tubing and the expansion device (Col. 12, line 7+); translating the

expansion device relative to the tubing (See Fig. 1); and creating the vibration by varying a pressure of fluid operatively associated with at least one of the device and the tubing (Col. 10, lines 31+, Figs. 5 & 6).

With respect to claim 84: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: A method of expanding tubing, the method comprising: locating an expansion device (16A & 16B) in tubing (12) to be expanded; vibrating at least one of the tubing and the expansion device (Col. 12, line 7+); translating the expansion device relative to the tubing (See Fig. 1); and creating the vibration by creating pressure pulses in a fluid operatively associated with at least one of the device and the tubing (Col. 10, lines 31+, Figs. 5 & 6).

With respect to claim 85: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: A method of expanding tubing, the method comprising: locating an expansion device (16A & 16B) in tubing (12) to be expanded; vibrating at least one of the tubing and the expansion device (Col. 12, line 7+); translating the expansion device relative to the tubing (See Fig. 1); and applying a fluid pressure driving force to translate the expansion device relative to the tubing (Col. 10, lines 12+, Figs. 5 & 6).

With respect to claim 86: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: A method of expanding tubing, the method comprising: locating an expansion device

(16A & 16B) in tubing (12) to be expanded; wherein the expansion device is in rolling contact with the tubing (Fig. 1); vibrating at least one of the tubing and the expansion device (Col. 12, line 7+); and translating the expansion device relative to the tubing (See Fig. 1).

With respect to claims 90, 96, 100, 104 & 108: Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: inserting the tubing (12) into a wellbore (10).

With respect to claims 91, 97, 101, 105 & 109 : Zheng et al. (Abstract, Figs. 1, 3, 5, 6 & 7, claims) discloses: wherein inserting the tubing (12) into a wellbore (10) occurs prior to translating the expansion device (16A & 16B) relative to the tubing (Fig. 1).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung C. Le whose telephone number is 571-272-8757. The examiner can normally be reached on M-F: 07:30am - 05:00 pm.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HCL
12/05/06


JACK KEITH
SUPERVISORY PATENT EXAMINER